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**McNally Fire
Burnt Ridge Restoration Project
Environmental Assessment**

Hot Springs Ranger District, Sequoia National Forest
Tulare County, California

Entomology Input
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Introduction

The main entomological concern for the McNally/ Burnt Ridge Restoration Project is the potential for insects to buildup in fire killed and injured trees and subsequently kill additional fire injured and uninjured trees.

Insects, specifically bark and engraver beetles in the family Scolytidae (Coleoptera), are capable of attacking and building up populations in fire injured, but not killed, conifers. The potential exists for these populations to subsequently attack additional fire injured and uninjured conifers. Based on the tree species involved in the McNally Fire, the following species of bark and engraver beetles are of potential concern; 1) the western pine beetle (*Dendroctonus brevicomis*) in ponderosa pine; 2) the mountain pine beetle, *D. ponderosae*, in ponderosa, sugar and lodgepole pine; 3) the Jeffrey pine beetle, *D. jeffreyi*, in Jeffrey pine; 4) the fir engraver, *Scolytus ventralis*, in red and white fir; 5) the California five-spined ips, *Ips paraconfusus*, all pines in area; 6) the pine engraver, *I. pini*, in Jeffrey, ponderosa and lodgepole pine; and 7) the emarginate ips, *I. emarginatus*, all pines in area..

The red turpentine beetle, *D. valens*, which can attack all pine species in the area, is often found attacking the base and/or lower bole of fire injured trees. Unless other tree debilitating factors are involved, such attacks alone generally do not result in the death of the tree. Wood borers, including the flatheaded or metallic wood borers (Coleoptera: Buprestidae), roundheaded wood borers or longhorned beetles (Coleoptera: Cerambycidae) and horntails or wood wasps (Hymenoptera: Siricidae) frequently attack fire killed and fire injured trees. Wood borers contribute to the decomposition process

and can cause a reduction in the commercial value of salvaged material, but are not a threat to healthy, uninjured trees. In addition, beetles in the genus *Phloeosinus* sp. (cedar bark beetles) may attack fire injured incense-cedar but rarely attack and kill healthy trees.

Observations

A field survey was conducted on June 4, 2003. The area surveyed included stands along 23S16 within the Speas Creek and Tobias Creek subwatersheds.

Survey results are summarized as follows:

- 1) Current red turpentine beetle attacks at the base/ lower bole of fire injured pines were observed scattered discontinuously in the burned area. Red turpentine beetle activity may continue into 2004 but is not expected to significantly contribute to additional tree mortality. In addition, wood borers and ambrosia beetles were found attacking fire killed and fire injured trees. The wood borer attacks on the lower bole of fire injured trees appeared largely restricted to fire scorched areas on the bark and were frequently associated with clear pitch streaming and sometimes reddish boring dust. Ambrosia beetle attacks on fire injured trees were also limited to fire scorched areas of the bark and were often accompanied by whitish boring dust.
- 2) There was no indication of current bark beetle activity in the burned areas surveyed. No recent or currently infested trees were found and no pattern of recent or current crown fade (other than directly due to fire injury) was observed that would indicate attacks in the summer or fall of 2002 following the burn.

Conclusions

Based on the above observations from the survey conducted in early June, 2003, there is little basis for concern that bark beetles are building up populations in fire injured trees and will cause much additional mortality of fire injured or uninjured trees. There is little evidence at this time that bark beetle-related mortality is contributing significantly to fuel loadings. From an historical perspective, bark beetle outbreaks did not develop after two recent fires on the Sequoia National Forest (the Manter Fire in 2000 and the Stormy Fire in 1990). Bark beetle outbreaks have not been reported after several other wildfires in California since the 1990's. Field going personnel should continue to look for evidence of bark beetle activity throughout the summer and fall of 2003 and request an additional evaluation as appropriate.